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17. ABSTRACT (MAX. 280 WORDS)							
Programs for fourth grade are divided into four areas: art, music, physical education and science. Art lessons include the paper construction of rockets and space-ships, finger puppets, sandpaper prints and glass additive prints. Each lesson is presented complete with purposes, process and medium, subject, materials, proposed sequence, and additional activities. Teachers are advised to anticipate needed materials since pupil participation should be undertaken as soon as possible after the telecasts. The general purpose of the music program is to acquaint students with the appearance, sound and tone quality of the instruments of an orchestra, such as the bassoon, contra-bassoon, violin, viola, cello, and bass viola. To make lessons meaningful, pupils should be encouraged to listen to broadcasts featuring orchestras and bands, attend concerts, make music notebooks and build a vocabulary of musical terms. Physical education activities for this group include balancing, cartwheels, four square skills, and softball skills. Students should participate in the activities soon after the telecasts. Science telecasts are designed to bring to teachers and pupils certain experiences which might not ordinarily be possible in the classroom. For some classes, the telecasts might provide enrichment, while, for others, serving as an introduction or motivation for a particular area of study. Units include simple machines, rocks and minerals, birds, and plants. Activities correlated with each unit are suggested, together with vocabulary to be developed.							
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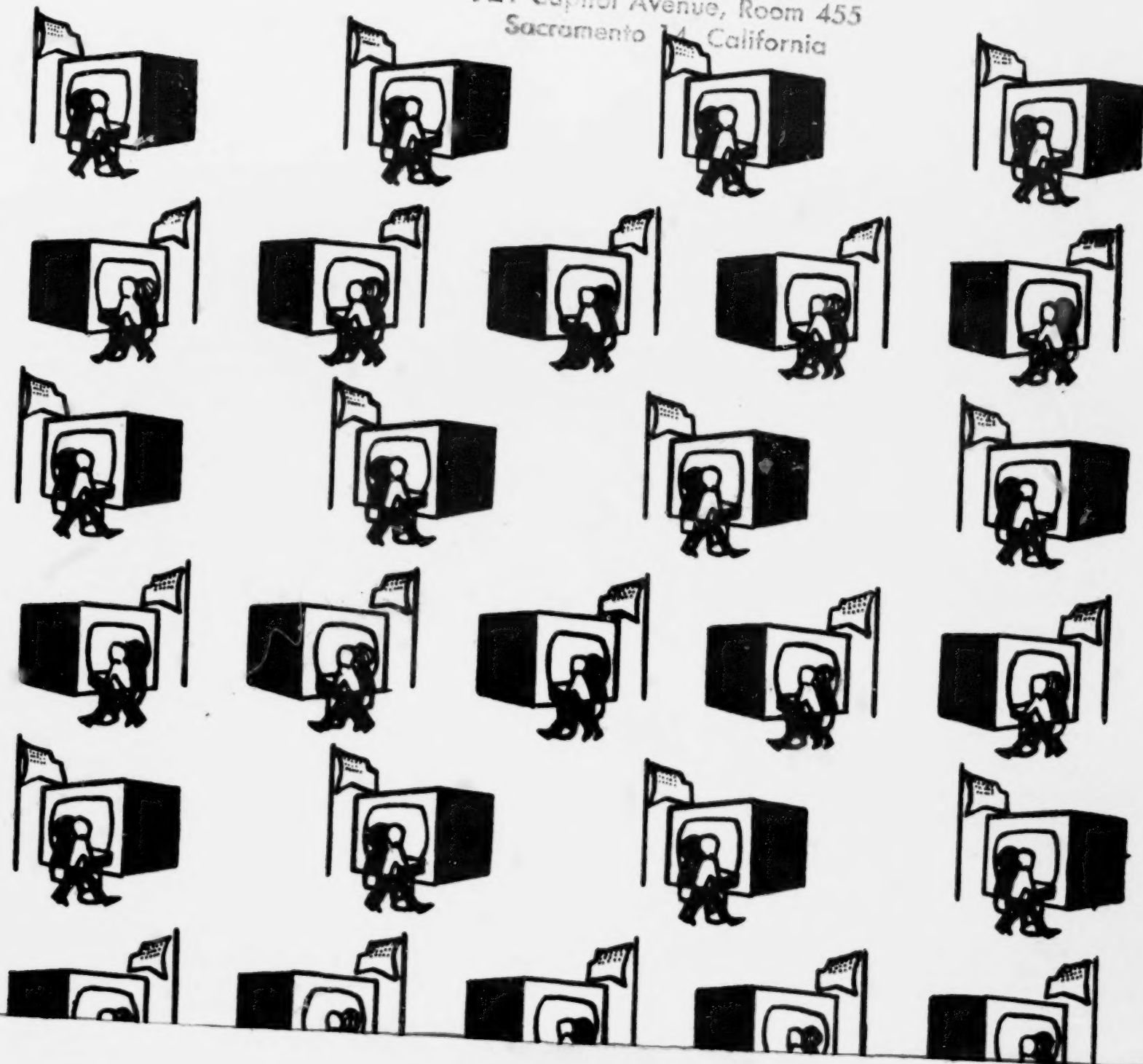
instructional television

FOURTH GRADE

SPRING 1962

Return to
CURRICULUM LABORATORY
721 Capitol Avenue, Room 455
Sacramento 14, California

ED001399



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INSTRUCTIONAL TELEVISION

FOR THE
FOURTH GRADE

A TEACHER GUIDE
SEMESTER II

Prepared by

Art Department

Music Department

Physical Education Department

Department of Upper Grade Curriculum and Instruction

Educational Television Department
Division of Curriculum and Instruction
Milwaukee Public Schools

1962

ACKNOWLEDGMENTS

Sincere appreciation is expressed to those teachers and members of the Superintendent's staff who have conscientiously prepared the materials in this guide. They are:

"ART FOR YOU"

The Art Department

Mr. Alfred Pelikan, Director
Mr. Gordon Borchardt, Supervisor

"MUSIC FOR YOU"

The Music Department

Dr. Joseph Skornicka, Director
Miss Roberta Best, Supervising Assistant
Mrs. Mildred Housfeld, Supervising Assistant

"PHYSICAL EDUCATION FOR YOU"

The Physical Education Department

Mr. George Wolf, Director
Mr. Robert McLaughlin, Supervising Assistant

"SCIENCE FOR YOU"

The Department of Upper Grade Curriculum and Instruction

Miss Lillian Paukner, Director
Mr. Roy Swenson, Supervisor, Conservation
Mr. Michael Russell, Acting Supervisor
Mr. James Ebner, Studio Teacher
Mrs. Lois Binford, Teacher
Mr. Albert Mangen, Teacher
Miss Martha Pavcek, Teacher

Robert R. Suchy, Director, Educational Television Department

THE TELEVISION STATION

The instructional telecasts produced by the Milwaukee Public Schools are broadcast in cooperation with WMVS-TV transmitting on Channel 10. The station is owned and operated by the Milwaukee Vocational and Adult Schools, and provides broadcast services for a number of agencies throughout the greater Milwaukee area.

In addition to instructional telecasts at the elementary and secondary levels, the station broadcasts adult and college level telecourses. It is also active in broadcasting general educational programs to both children and adults in the Milwaukee community, some of which are produced for the National Educational Television Network.

Dr. Otto Schlaak, Station Manager

Dr. George A. Parkinson, Director

Milwaukee Vocational and Adult Schools

FOREWORD

The Fourth Grade telecasts have been prepared as one of several instructional telecast series for use by elementary teachers in the Milwaukee Public Schools. These telecasts are intended to provide Milwaukee school children with a rich, well-developed resource for the classroom.

The telecasts are designed to relate to the on-going curriculum and their primary purposes are as follows:

1. To feature introductory motivations which will allow classes freedom of choice to interpret and develop activities in many different directions.
2. To encourage pupils to develop and improve processes of thinking and planning as they participate in classroom activities.
3. To provide pupils with rare and unusual experiences through the medium of television which would be difficult or impossible to do in the classroom.

It is hoped this guide and the resources of television will enable each classroom teacher to fulfill more completely his potentialities as a teacher.

Dwight Teel, Assistant Superintendent, Division of
Curriculum and Instruction

Harold S. Vincent, Superintendent of Schools

TELECAST CALENDAR

FOR THE

FOURTH GRADE

DATE		SUBJECT	LESSON	PAGE
February	13	Science	13	44
	15	Music	5	16
	20	Science	14	44
	22	Physical Education	5	23
	27	Science	15	44
March	1	Art	5	3
	13	Science	16	51
	15	Music	6	17
	20	Science	17	51
	22	Physical Education	6	26
	27	Science	18	52
	29	Art	6	5
April	3	Science	19	52
	5	Music	7	18
	10	Science	20	56
	12	Physical Education	7	29
May	1	Science	21	56
	3	Art	7	7
	8	Science	22	57
	10	Music	8	19
	15	Science	23	57
	17	Physical Education	8	32
	22	Science	24	57
	24	Art	8	9

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TELECAST SCHEDULE WMVS-TV CHANNEL 10

1:40-2:00 p.m.

Tuesdays - Science

Thursdays - Art

Music

Physical
Education

ART FOR YOU

TO THE TEACHER

In the elementary school at the fourth grade level there is a 175-minute weekly time allotment for instruction in art. The time spent viewing the telecasts should be considered a part of the time allotted for art instruction.

The primary purposes of the telecast series are stated with each specific lesson. There is a special purpose in the overall sequence of the series. The series' structure includes the fundamental principles applicable to such basic areas as: line drawing, picture making, design and construction.

Emphasis upon art principles, however, should not interfere with the main objective: to motivate pupils so they will express themselves through the creation of individual and successful works.

The following recommendations are made for using the lessons in this guide:

Pupils should view, listen and then participate in the actual work as soon after the telecast as possible. It is highly essential to concentrate on the telecast itself, and in many cases it would be well to take notes on the sequence and processes.

Teachers are advised to anticipate needed materials in advance. The lesson on finger puppets will require wall paper paste which may be requisitioned from the Art Department.
(2 lbs. - Item No. 3312)

Most of the other materials are available through the regular supplies or may be easily obtained.

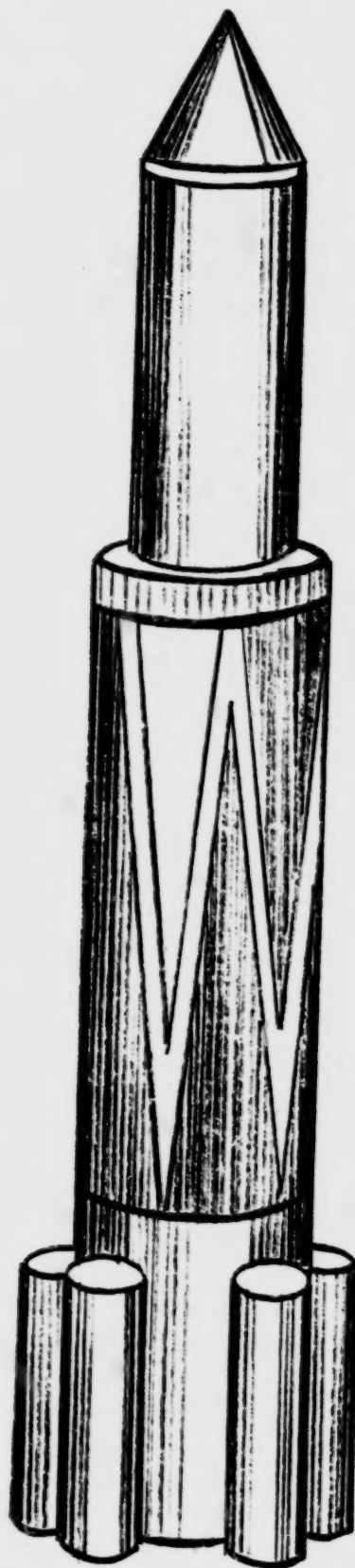
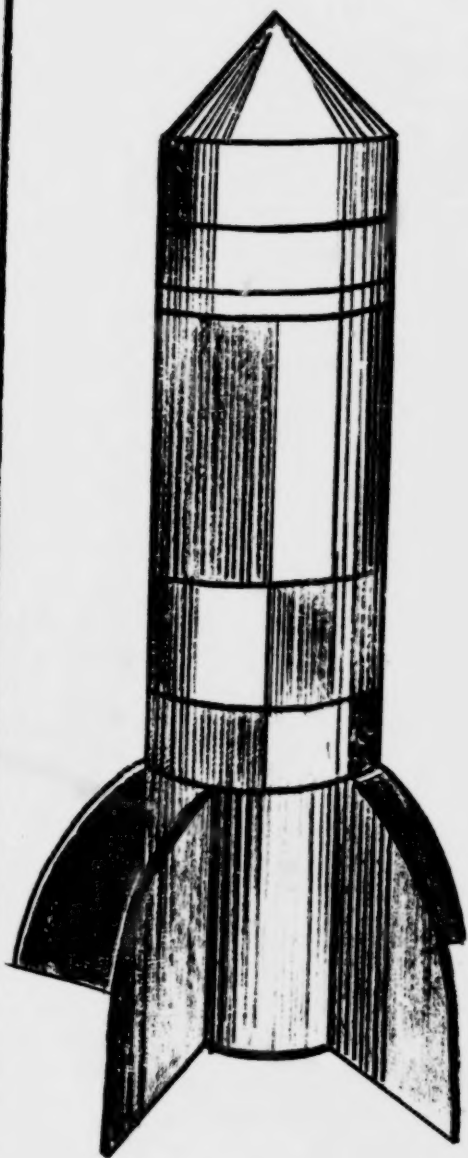
This manual should be consulted for necessary preparations. These may include reference study, observation, sketching on location, teacher-pupil planning, and the procurement and supply of materials and equipment.

Pupils within the class should be encouraged to do individually creative work.

The classroom teacher is an important, integral part of the telecast art lesson. The teacher is responsible for carrying the ideas presented to a tangible, successful conclusion.

Gordon Borchardt, Supervisor,
Art Department

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MAKING A
CONE

ROCKETS AND SPACESHIPS

PURPOSES

To encourage the invention of various experimental rocket shapes.
To provide the opportunity to work in the area of construction.
To suggest a subject which should have popular appeal especially to the modern child.

PROCESS AND MEDIUM

Paper construction based upon a basic cardboard paper toweling tube. Several basic methods of creating cones, tail fins, etc., will be suggested.

SUBJECT

All types of projected forms such as rockets, spaceships, missiles, and nose cones.

MATERIALS

Cardboard tubes
Construction paper
Paste, scissors, string, yarn
Metallic papers, metal foil
Stapler; gummed or plastic tapes

PROPOSED SEQUENCE

Gathering of the necessary materials especially cardboard tubes.
Covering of the tubes with colored construction paper.
Experimenting with devices to serve as cones, warheads, fins, guides, rocket tubes, etc.
Decorating the forms with colored bands, yarn bands, metal foil, or colored tape.

ADDITIONAL ACTIVITIES

Continue the development of these forms in all sizes depending upon the tubes available. Large mailing or packing tubes would be excellent for initial construction.

The finished rockets may be placed on room ledges or hung with string.



FINGER PUPPETS

PURPOSES

To provide opportunities to create individual puppet characters.
 To introduce the individual puppet as a vehicle through which a child can express himself orally. To provide the experience of constructing with papier-maché, cloth and paper.

PROCESS AND MEDIUM

Papier-maché construction, cloth for costume

PREPARATION--SUBJECT MATTER

Preliminary planning would consist of choosing individual characters. There are two basic approaches to puppet use. The first encourages each child to develop a character which will be used in an individual monologue. This may be a character from a story, a historic personality, a pioneer or Indian as suggested in the social studies, a clown, an animal, or a doll.

Although these beginnings originate with the pupil, like themes and interests can stimulate groupings into work teams or committees.

The second approach involves the entire class in an original production based upon a central theme. The source may be from literature, pioneer life, life in the various geographical sections studied or good practices of safety or health.

MATERIALS

Newspaper, string, wallpaper paste, tag board and a variety of materials for costumes and head coverings: cloth, yarn, needles and thread, string, opaque paint, etc.

PROPOSED SEQUENCE

Discussion with the forthcoming decisions and planning on the puppet use.

Construction of the basic heads embodying the use of the fore-finger control tube.

Adding the projecting features--nose, eyebrows, cheekbones, chins, lips, etc.

Adding the hair, hats or other head coverings.

Painting the heads and faces.

Sewing of the required costumes and mittens.

Selection and experimentation with class areas from which to perform.

Developing background settings.

ADDITIONAL ACTIVITIES

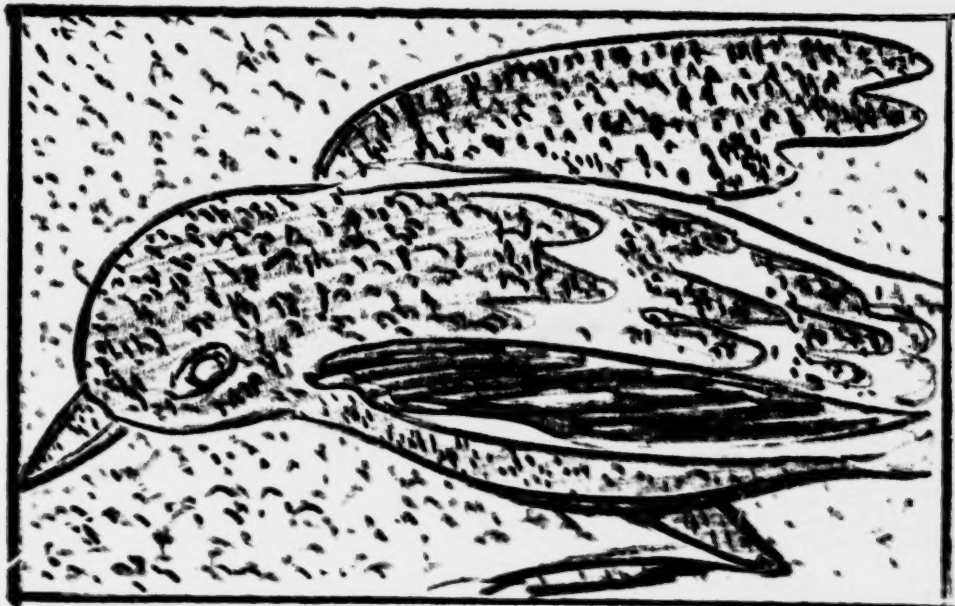
Additional activities would be in the completion or refinement of the final dramatic presentation. First experiments can lead to the following developments:

Construction of a class puppet stage.

Construction of a puppet stage for the school or auditorium stage.

Experiments with background settings and lighting.

Note: It is suggested that the art supervisor may be consulted for help with such developments and refinements.



SANDPAPER PRINTS

PURPOSES

To provide a new technique by which and through which a child can create an unusual bird concept. To introduce another use for crayon which goes far beyond its most common use.

PROCESS AND MEDIUM

A monotype process in which wax crayon is transferred from sandpaper to paper or cloth by using a warm flat iron.

SUBJECT

The suggested subject is birds, a theme being presented by the telecast series of elementary science. Familiarity with birds can be gained by observation and study of real birds, mounted specimens, charts, and informational readings.

MATERIALS

Sandpaper, moderately fine, No. 210, in sections of a 9" x 11" piece of sandpaper

Wax crayons

Paper upon which to print: manila, white, newsprint, colored construction paper

A flat iron

PROPOSED SEQUENCE

Becoming informed as to bird structure and forms.

Sketching from real birds or mounted specimens is among the best aids to understanding.

Procuring pieces of sandpaper.

Sketching a bird form lightly and with one crayon.

Coloring the initial sketch using strong crayon strokes and piling up the wax to considerable thickness.

Coloring the background in a value in direct contrast to the value of the bird itself.

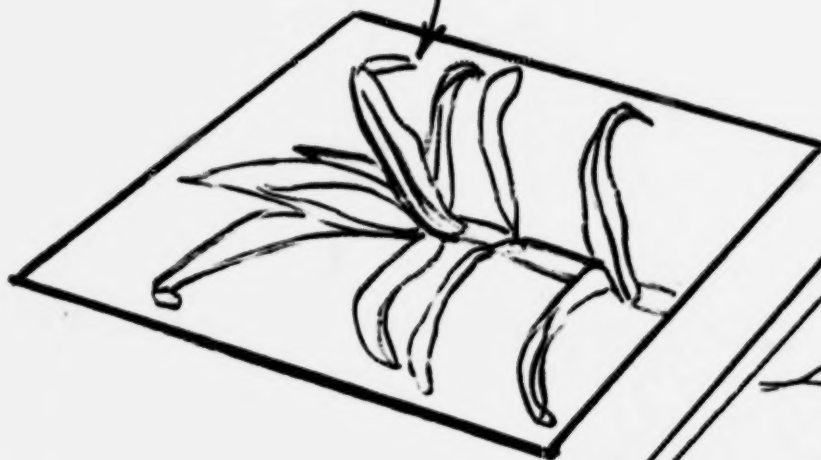
Transferring the sandpaper drawing to paper by laying paper over it and pressing with a hot flat iron. Paper padding lying underneath will insulate a desk or table and insure a better print.

ADDITIONAL ACTIVITY

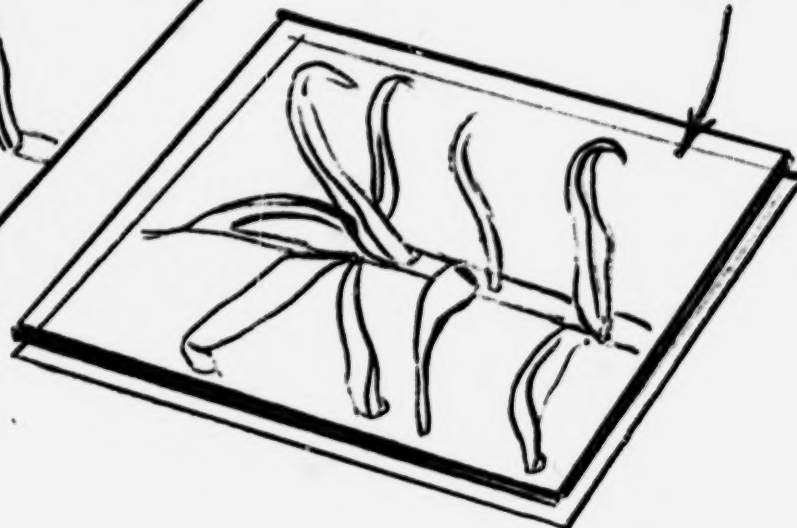
Additional prints may be made by going over the original sandpaper drawing with a new layer of crayon, then pressing as before.

Prints on other backgrounds including cloth may be attempted.

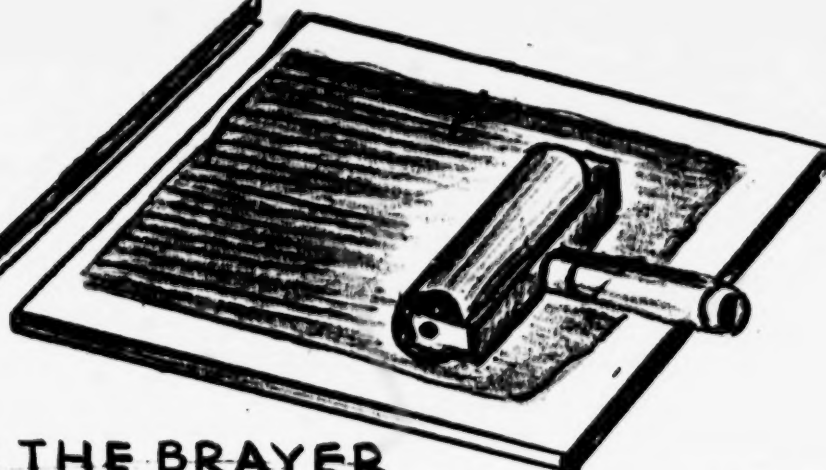
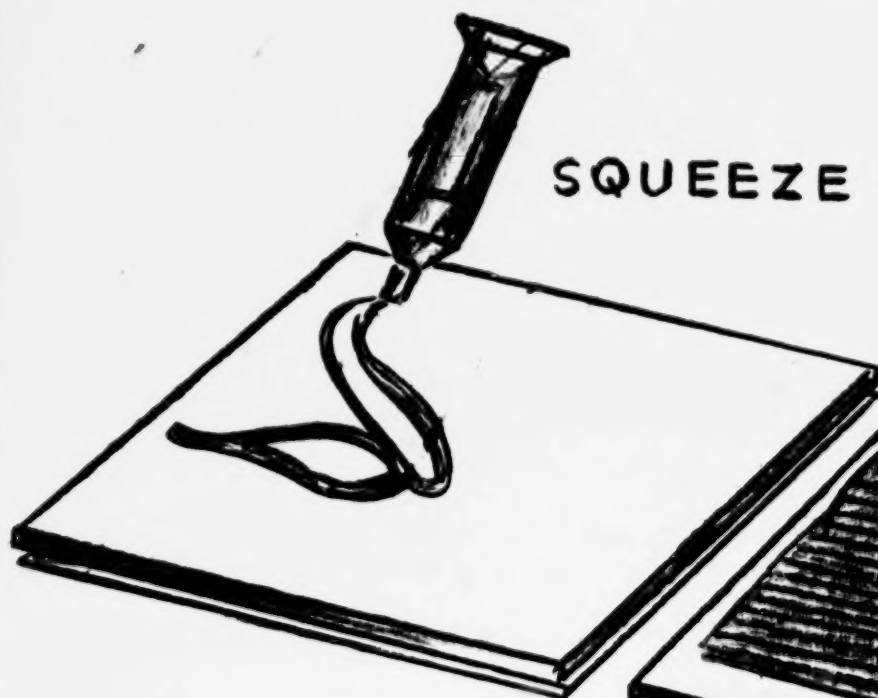
SKETCH



UNDER GLASS



SQUEEZE CEMENT



INK THE BRAYER
ON GLASS TILE. APPLY TO PLATE

GLASS ADDITIVE PRINTS

PURPOSES

To provide a type of creative activity which is especially suitable to nature's spring subject of plants. To motivate class interest through the introduction of a new process. To encourage the interpretation of a variety of plant forms, depending upon the types which are available for observation and study.

PROCESS AND MEDIUM

Building a relief (raised) line on glass by using quick drying airplane or household glue in a tube.

SUBJECT

The general subject of plant life is channeled into specific areas such as wild flowers, spring garden flowers, green plants, shrubbery, blossoming fruit trees or shade trees.

MATERIALS

Pieces of window glass or plate glass approximately 8" x 11" or larger

Manila paper and sketch medium such as crayon or soft pencil

Airplane or household glue

Printer's ink or casein paint

Paper for printing, typing paper; newsprint works best.

PROPOSED SEQUENCE

Sketching of plant forms from life in the classroom, greenhouse, or at home.

Squeezing out the cement onto the glass surface with the sketch lying under the glass as a guide.

Printing from the raised plate by using brayers, inking tile, and pressure. The paper is laid on the inked plate, then rubbed with the hand, with a spoon or with a dry brayer.

ADDITIONAL ACTIVITIES

A plant form may be printed in several colors. Each color is produced with an individual print, registered accurately by working from the same sketch underneath, and by marking the location of both the sketch and the print paper.

MUSIC FOR YOU

TO THE TEACHER

In the elementary school there is a 100-minute weekly time allotment for instruction in music. The Music Department recommends that one-fifth of this time, or 20 minutes each week, be used for listening lessons based on the telecast and the RCA record albums supplied each building.

The time spent by the teacher and the class in viewing the telecast is considered a part of the allotted time for music instruction.

GENERAL PURPOSE

To acquaint young people with the appearance, sound and tone quality of the instruments of the orchestra.

To show how each instrument is played.
What vibrates to produce the tone.
How the vibration is produced.
How the pitch is altered.

TEACHER PREPARATION

In preparation for using these lessons, the following recommendations are made:

Consult the manual for the necessary preparations and for the classroom activities to follow each lesson.

Locate and become personally acquainted with:

RCA Instruments of the Orchestra Charts. A set has been supplied each building.

Set of records, "The Instruments of the Orchestra"
- Milton Cross

RCA Victor Record Albums

Listening Activities Volumes 4 and 5

Rhythmic Activities Volume 4

GOOD READING--the 1960 basic book catalog for grades 4-8, music section, pp. 46-53.

Display a picture of the featured instrument or instruments in each lesson before and after the telecast.

TO THE TEACHER (continued)

ACTIVITIES FOLLOWING THE TELECAST

Play the recordings listed at the end of each lesson.

Encourage pupils to:

Listen to broadcasts and telecasts which present orchestras, bands, and other instrumental performers.

Attend concerts.

Read and report on the history of instruments and the lives of famous composers.

Make music notebooks.

Build a vocabulary list of musical terms.

Miss Roberta L. Best,
Supervising Assistant, Music

THE SYMPHONY ORCHESTRA¹

Last semester you were introduced to the conductor of the orchestra and his score (the music from which he works). You learned about vibration as the source of all sounds. You became acquainted with three of the members of the woodwind family. The lessons this semester will complete the woodwind family and acquaint you with the members of the string family.

THE WOODWIND FAMILY

The flute and piccolo are in a class by themselves in that the vibrations are caused by blowing against the opposite edge of an open hole. This is similar to producing a sound by blowing across the top of a bottle. The other woodwinds use reeds to produce the vibrations--a single reed and mouthpiece for the clarinet and double reeds for the oboe and bassoon. In the brass family the vibrations are originated by the lips of the performer. Vibrations in the string family are produced by the strings.

As we go into our study of the instruments of the orchestra, become familiar with the following terms:

- Key: Mechanism for opening and closing a hole.
- Pad: A piece of felt, covered with a thin membrane, for covering a hole so that it is airtight.
- Pitch: The highness or lowness of a musical sound as determined by the speed of the vibrations.
- Scale: Series of tones, ascending or descending, in order of pitch, according to a specified scheme.

The clarinet is the most common and most popular woodwind instrument. Clarinets are played with a single reed attached to a mouthpiece. The same is true of Saxophones. While the Saxophone (capitalized because it is named after its inventor, Adolphe Sax) is seldom called for by the symphonic composer, it is widely used in bands and dance orchestras.

The main differences in tone quality between clarinets and Saxophones result from the fact that clarinets are cylindrical while Saxophones are conical.

The origins of the names of the oboe and English horn are interesting. Early double reed instruments were popular on the Continent before becoming common in England. The word oboe is an anglicized pronunciation of the French words haut bois meaning high wood. The alto instrument of the double reed group was not straight in shape like the oboe, but was curved or angular, and was known as cor angle or angle horn. Horn in this sense is used loosely, and sometimes modern players refer to their instruments as horns even though they play woodwinds or even strings. The French word angle was strangely misinterpreted as being anglais (English), and the instrument came to be known in England as an English horn, although it is not English, nor is it strictly a horn.

¹Excerpts from Manual for Teachers--The Wisconsin School of the Air; Television Programs for Schools, Fall, 1959.

THE SYMPHONY ORCHESTRA

THE WOODWIND FAMILY (continued)

The bass member of the woodwind family is called, appropriately, the bassoon. The Italian name for this instrument is fagotto, the Italian word for a bundle of sticks, which it is supposed to resemble.

In the hands of a skilled performer, the bassoon is sweet and appealing in the upper register, and richly sonorous in the middle and lower tones. Although, like the oboe and English horn, the bassoon is a double reed instrument, the tone quality is much less penetrating. The sound of a bassoon is often harder to recognize than that of the other woodwinds, except when played in its lower range, because the higher tones are so self-effacing and because it blends so well with other instruments.

The contrabassoon produces the lowest sounds of the entire symphony orchestra--down to the lowest B flat on the piano. It's closest rival in this regard is the bass viol, or contrabass, which goes to the lowest E on the piano. With a special extension device it can go even lower. The contrabassoon is played by one of the bassoon players.

From piccolo to the contrabassoon, the woodwinds represent the highest and lowest sounds in a symphony orchestra. Tones are produced by blowing across an open hole, by single reeds, and by double reeds.

THE STRING FAMILY

Almost a third of a large symphony orchestra consists of violins. This, together with the large number of other stringed instruments, helps give the orchestra its wonderfully rich and sonorous sound.

The various parts of the violin will be shown and defined: the scroll, tuning pegs, peg box, neck, fingerboard, shoulders, holes, bridge, and tailpiece. Pupils will have a close look at the bow, with its frog, screw, and horse hair.

The shape, design and proportion of the violin were established about 250 years ago and have not been improved upon since. All modern violins are patterned after instruments made by those early masters, most of whom were Italians.

Special effects of interest on the violin are the vibrato, which makes the violin sound more like a human voice, and the playing of the strings by plucking, called pizzicato.

The violin is extremely versatile, being able to play melodies with unsurpassed warmth and beauty of tone and to play rapid passages calling for the utmost agility and speed.

THE SYMPHONY ORCHESTRA

THE STRING FAMILY (continued)

The viola is larger than a violin, and is the only instrument of the orchestra which commonly reads music written in the alto clef, with middle C on the middle line.

The violincello, commonly called just plain cello, is held between the knees, with a peg at the lower end resting on the floor. It can play very low parts but is frequently also used by the composer for fine melodies in the tenor or even alto range. Its strings are tuned exactly one octave below those of the viola, and the music is usually written in the bass clef.

The bass viol is extremely important because it forms the foundation of the tonal structure of an orchestra. It is also used in concert bands, in dance orchestras, and small combos. Not widely used as a solo instrument, it appeals to players who like its solidity and depth of tone.

All of the tones on the bass actually sound an octave, 8 notes, lower than they are written, so the bass normally goes down as low as the lowest E on the piano.

Two kinds of bows are used in playing the bass: the French bow, which has a narrower frog and is held like a cello bow, and the German bow, which has a wider frog and is held quite differently. Both kinds will be illustrated on the broadcast.

Two violins, a viola, and a cello form the traditional string quartet for which so much music was written by Mozart, Haydn, Beethoven and many others. Pupils will have a chance to hear and see a real string quartet.

INSTRUMENTS OF THE ORCHESTRA

The Woodwind Family: Bassoon, Contra-bassoon.

IMMEDIATE PURPOSE

To acquaint the pupils with the bassoon and contra-bassoon.

TEACHER PREPARATION

Become familiar with the recordings listed below under ACTIVITIES FOLLOWING THE TELECAST. Consult Notes for Teachers at the front of each record album for teaching suggestions.

ACTIVITIES FOLLOWING THE TELECAST

Continue to develop and expand this lesson using the suggestions from the Introduction to MUSIC FOR YOU, Page 11.

The following records contain sections in which the bassoon is easily recognizable:

The Instruments of the Orchestra--Milton Cross

Record--Side 2--Band 4--Bassoon and Contra-Bassoon
Record--Side 2--Band 5

Listening Album Vol. 4

Record #5036A--Band 1--Barefoot Coolings--Humperdink--(bassoon)

Rhythm Album Vol. 4

Record #5014A--Band 1--Country Dance--Weber--(bassoon)

Consult Instructions to Teachers in the Introduction to MUSIC FOR YOU, Page 11 for the source of supplementary reading books.

INSTRUMENTS OF THE ORCHESTRA

The String Family: Violin

IMMEDIATE PURPOSE

To acquaint the pupils with the violin.

TEACHER PREPARATION

Become familiar with the recordings listed below under ACTIVITIES FOLLOWING THE TELECAST. Consult Notes for Teachers at the front of each record album for teaching suggestions.

ACTIVITIES FOLLOWING THE TELECAST

Continue to develop and expand this lesson using the suggestions from the Introduction to MUSIC FOR YOU, Page 11.

The following records contain sections in which the violin is easily recognizable and examples of "pizzicato", the plucking of strings:

The Instruments of the Orchestra--Milton Cross

Record--Side 1--Band 2--Violin

Listening Album Vol. 5

Record #5042A--Band 1--Come Let Us to the Bagpipe's Sound--
Bach

Record #5042A--Band 2--Andante, Second Movement, Symphony #4--
Haydn

Listening Album Vol. 4

Record #5037B--Minuet--Boccherini--(pizzicato)

Rhythm Album Vol. 4

Record #5013B--Band 1--Passepied--Delibes--(pizzicato)

Consult Instructions to Teachers in the Introduction to MUSIC FOR YOU, Page 11, for the source of supplementary reading books.

INSTRUMENTS OF THE ORCHESTRA

The String Family: Viola and Cello

IMMEDIATE PURPOSE

To acquaint the pupils with the viola and cello.

TEACHER PREPARATION

Become familiar with the recordings listed below under ACTIVITIES FOLLOWING THE TELECAST. Consult Notes for Teachers at the front of each record album for teaching suggestions.

ACTIVITIES FOLLOWING THE TELECAST

Continue to develop and expand this lesson using the suggestions from the Introduction to MUSIC FOR YOU, Page 11.

The following records contain sections in which the cello is easily recognizable:

The Instruments of the Orchestra--Milton Cross

Record--Side 1--Band 3--Viola

Record--Side 1--Band 4--Violoncello

Listening Album Vol. 4

Record #5037B--Minuet--Boccherini (cello)

Record #5038B--Band 1--Theme from Sonata in A--Mozart
(Violin and cello duet)

Rhythm Album Vol. 4

Record #5014A--Band 2--Country Dance--Beethoven (cello)

Consult Instructions to Teachers in the Introduction to MUSIC FOR YOU, Page 11, for the source of supplementary reading books.

INSTRUMENTS OF THE ORCHESTRA

The String Family: Bass Viol (Double Bass)

IMMEDIATE PURPOSE

To acquaint the pupils with the bass viol (double bass).

TEACHER PREPARATION

Become familiar with the recordings listed below under ACTIVITIES FOLLOWING THE TELECAST. Consult Notes for Teachers at the front of each record album for teaching suggestions.

ACTIVITIES FOLLOWING THE TELECAST

Continue to develop and expand this lesson using the suggestions from the Introduction to MUSIC FOR YOU, Page 11.

The following records contain sections in which the bass viol (double bass) is easily recognizable.

The Instruments of the Orchestra--Milton Cross

Record--Side 1--Band 5--Double Bass (Bass Viol)

Record--Side 1--Band 7--"A Little Night Music"--Mozart

Rhythm Album Vol. 4

Record #5012A--Band 1--Skaters Waltz--Waldteufel (double bass--lowest notes)

Record #5014A--Band 1--Country Dance--Weber (Double bass--lowest notes)

Record #5015B--Band 1--Soldiers' Chorus--Verdi (double bass--lowest notes)

Consult Instructions to Teachers in the Introduction to MUSIC FOR YOU, Page 11, for the source of supplementary reading books.

PHYSICAL EDUCATION FOR YOU

TO THE TEACHER

The physical education telecasts are designed to present new activities, show the correct techniques of various skills and guide pupils in their development of desirable habits and attitudes. However, the ultimate objective is to help you, the teacher, give the pupils more opportunities in physical education.

The time spent viewing the telecasts should be considered a part of the 150 minutes allotted weekly to physical education activities. While the 20-minute programs are in progress, pupils should not participate in the activities. However, for better retention of the material, it is highly recommended that the class be given the opportunity to actively participate as soon after the program as possible.

Pupils will demonstrate various activities on the telecasts and when necessary, films will be used to show how a class is organized to practice skills or play games.

This material is prepared to give a preview of the content of each telecast and to provide detailed information for follow-up activities. In addition, your physical education supervising assistant will be ready and willing to render any additional help you may need.

If the supervising assistant is not due to visit your school when assistance is needed, consult with your principal. If you and he feel help is needed, please call GR. 6 - 3670, Ext. 288. Give your name, school and an indication of the help desired. We shall do our best to have someone visit your school as soon as possible.

Best wishes for many pleasant experiences in your physical education classes!

Robert McLaughlin, Supervising Assistant
Physical Education Department

BALANCE FOR FUN

ACTIVITIES TO BE DEVELOPED DURING THE TELECAST

Individual balances

Partner balances

Group balances

* * *

"Look at me! . . . I can do it now! . . . Balancing is fun!

Let me try it again! . . . I can do it next time!"

These are typical comments you will hear from children participating in a lesson of balance activities in a stimulating environment. Such comments are indicative of the child's desire to learn--to grow in strength and skill, in agility and dexterity. To meet individual as well as group interests, "Balance for Fun" is presented to add more zest to physical education for the children . . . and the teacher.

ACTIVITIES FOLLOWING THE TELECAST

Warm-up Activities

Just as for any sport, there should be a good warm-up before strenuous action begins. The physical fitness activities may consist of general exercises described below or very simple stunts. Exercises listed are described and illustrated in Physical Conditioning Movements for the Elementary Grades. All teachers should have a copy of this guide.

<u>Exercise</u>	<u>Page</u>
Trunk Bending Sideways	21
Neck Limbering	20
Trunk Twisting	20
Stretcher	24
Straddle Touch	26
Side Straddle Hop	30
Burpee	31

BALANCE FOR FUN (continued)

ACTIVITIES FOLLOWING THE TELECAST (continued)

Class Organization and Presentation

Each balancing stunt should be analyzed and all possible risks eliminated by:

- Explanation and demonstration of each stunt from start to finish. Pupils may demonstrate while teacher explains.
- Teacher or children spotting, when necessary.
- Teaching the balance skills in the progression listed to permit easy transition from known to unknown.
- Being sure in group stunts that the pupils are approximately the same size.
- Using mats for balances when needed, and reading descriptions and suggestions carefully in the Self-Testing Guide for Elementary Grades.
- Taking into consideration physical limitations. Watch for fatigue and do not allow children who are tired to continue the activity. Do not allow children recuperating from recent illnesses to participate.
- Having classes prepare posters with rules and regulations for procedures with safety and the best learning conditions in mind.

It is important that interest be held by introducing enough material each period to challenge the more proficient and by organizing the class in squads to allow frequent individual turns.

Try to develop a group feeling of pride in good execution and discourage laughter or critical remarks directed toward poor performers. Place praise and attention on the ones who try as well as on those who show excellent form.

* * *

Before teaching the following balancing activities, the teacher should review pages 1, 2, and 3, in the guide, Self-Testing Activities for the Elementary Grades. Suggestions concerning partner and group balances are on pages 69 and 91. The following balances are from the Self-Testing Activities guide.

Individual Balances

Support Balances, page 55

- Using terminology such as, "Glue one hand and one foot to the floor," helps pupils to better understand what you want them to do.
- Have children experiment to see how many ways they can move while doing the various support balance stunts.

BALANCE FOR FUN (continued)

ACTIVITIES FOLLOWING THE TELECAST (continued)

Individual Balances

Elbow-Shoulder Balance, page 56

Tripod, page 56

Partner Balances

In partner and group balances, boys should work with boys, girls with girls.

Bridge, page 70

- Balancer should slowly place one foot at a time on base's back when assuming the balance position.

Golden Gate, page 71

Triangle, page 72

Front Horizontal Balance, page 73

Group Balances

Balance #1, page 91

- When building pyramids, it is helpful to the teacher to progress through the various steps, using signals.
An example:

- Count 1: Bases move to positions on mats.
- Count 2: Tops move to positions.
- Count 3: All tops mount.
- Count 4: Tops dismount.
- Count 5: All return to place.

Balance #2, page 92

- Balancer must stand on lower back, never on middle of base's back.



Balance #3, page 92

CARTWHEELS

ACTIVITIES TO BE DEVELOPED DURING THE TELECAST

The Cartwheel Progression

Raising hips
 Jump Support
 Support jump turn
 Jump support and leg change
 Simple cartwheel
 The cartwheel

ACTIVITIES FOLLOWING THE TELECAST

Class Organization and Presentation

Safety Measures

- Mats are not needed in the cartwheel progression through the first four steps listed above. However, it is suggested that mats be used when pupils are first learning the simple cartwheel and the cartwheel itself.
- The first four steps are best taught with the boys and girls in a scattered formation around the play area.

Children should be reminded to check their own space carefully when practicing the stunts in order to avoid kicking someone.

- Have children always face in the same direction to facilitate giving instructions and allowing the pupil to stand clear of those in front of him.
- After instruction and pupil demonstration, free practice is preferable at the beginning of the cartwheel progression through the first four activities.
- The cartwheel progression should be followed in its successive stages to assure best learning by the pupils. No boy or girl should progress to a more difficult step in the progression before first becoming adept at the previous step.

In each class a few children may already know how to do the cartwheel. They, too, should progress through the various steps for review and improvement of the activity.

CARTWHEELS (continued)

ACTIVITIES FOLLOWING THE TELECAST (continued)

On the other hand there may be some who will not progress beyond the simple cartwheel. Do not be too concerned if all pupils in the class are not able to execute a true cartwheel. It is better to allow each child to progress at his own rate, rather than extend him beyond his capacity.

The Cartwheel Progression

Descriptions and suggestions for each step are found on pages 64, 65, and 66 in the Self-Testing Activities for Elementary Grades guide.

Raising Hips

- The important point to emphasize is for each child to keep his head up and put some weight on his hands.

Jump Support

- Encourage pupils to transfer all the weight to the hands and arms during this step.
- Remind pupils to keep head up and look at fingers throughout the jump support.

Support Jump Turn

- Try this teaching technique in addition to the suggestions in the guide:

With pupils' hands placed so that fingers are slightly to the left of center, have all boys and girls turn body and face towards right side of the play area. At completion of the turn, all should face left side of play area.

Jump Support and Leg Change

- Suggestions for teaching this step are complete in the guide. However, some teachers have found it advantageous to have the pupils push off the left foot only, to provide continuity from the previously learned support jump turn.
- One additional step is also helpful to add to this part of the progression: After the pupils have learned the jump support with the leg change, have them turn from right to left as they push off with the left foot and land on the right.

CARTWHEELS (continued)

ACTIVITIES FOLLOWING THE TELECAST (continued)

Simple Cartwheel

- Complete suggestions are found in the guide.

The Cartwheel

- Instead of beginning with arms spread wide as illustrated in picture #1 in the guide, have pupil assume starting position as illustrated.



- With arms in this starting position, pupils will find it easier to put the hands correctly on the mat to better support their weight while performing the cartwheel.



"FOUR SQUARES"

ACTIVITIES TO BE DEVELOPED DURING THE TELECAST

Four square skills

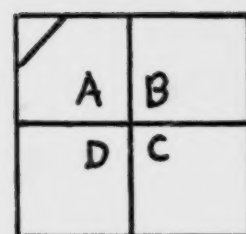
Correct rules for playing the game

Playing the games

ACTIVITIES FOLLOWING THE TELECAST

Rules of the game "Four Squares"

Playing Area: 4-square court



Skills: To bounce serve a volleyball.
To return a ball after it has bounced once in a quadrant.

Equipment: One volleyball for each court

Number of players: Four players, one for each square.
Not more than two players should be required to wait for a turn on a court.

Procedure and rules:

The object of the game is to advance to quadrant A and stay there as long as possible.

Serving: The server must stand behind the diagonal serving line in court A. (See diagram.) The player in square A starts the game by serving the ball, which must be served underhanded by dropping the ball to the ground, and then batting it underhanded with two hands. The ball must be served to bounce into square C to start the game.

- It is a fault to step on the service line.
- If the serve lands in any square other than "C" or on a line, it is a fault.

Play: Player C, receiving the volley, must keep the ball in play by striking the ball after it has bounced once, and directing it towards any of the three other courts. The ball must always be hit with the open hand, fingers pointing downward.

"FOUR SQUARES" (continued)

ACTIVITIES FOLLOWING THE TELECAST

Play: A player who misses or faults must move to the rear of the waiting line, while the other players move counter-clockwise one square. (For example, if B faults, player C moves to B, D to C, and B goes to end of waiting line. Player at head of waiting line moves into quadrant D.) After a fault or a miss, the game begins again with a serve by player A.

Faults

Failure to return the ball to another square after it lands in a player's area.

Stepping on or over service line while serving. However, the ball may be bounced over line prior to the serve.

Striking ball with fist.

Hitting ball overhand (fingers not pointing downward).

Allowing ball to touch any part of body except hands.

Player momentarily holding the ball (stickies).

Causing ball to land on a line.

Example I: Player B strikes ball that lands on a line. After it bounces on the line, player C strikes ball. The ball hit by C lands outside of the 4-square court.
Ruling: Player C is out of the game for hitting ball out of bounds.

Example II: Player B strikes ball that lands on a line. Player C strikes ball which bounces into square A.
Ruling: Game continues without interruption. When player C hit ball bounced on line by player B, player C assumed the responsibility of playing the ball into another square.

Organizing the Class for Playing Four Squares

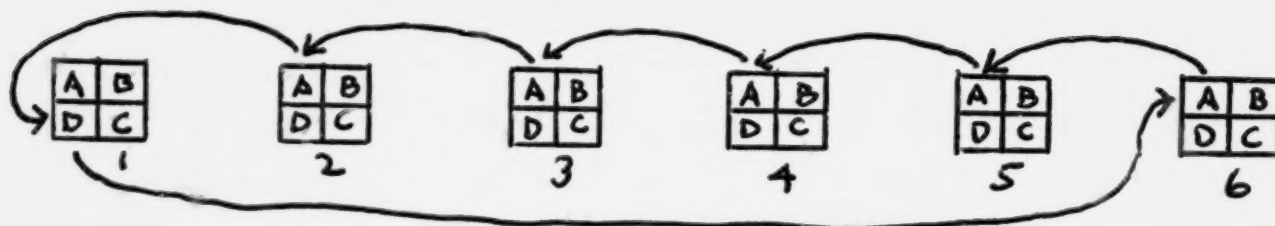
If possible, one volleyball should be provided for every six players. For an ideal situation, one ball should be available for every four players. When this is done, no child is forced to remain inactive while standing in a "waiting line."

"FOUR SQUARES" (continued)

ACTIVITIES FOLLOWING THE TELECAST

Tournament-type of organization

Have a pupil number each square.



Players begin play in each square on signal from the teacher. After two minutes, the teacher signals for play to stop.

All players who are in square A when the stop signal is given, move up to square A in the next 4-square court.

Example: Player in square A, court 6, moves to the A square in the fifth court. Player A in the 5th court moves up to player A position in court 4.

Player in square A of court 1 remains in that position.
Player in square D of court 1 moves to square A in court 6.
Player A from square 2 moves to square D, court 1.

After players change positions, begin play again on signal for another 2-minute play period.

At conclusion of physical education period, boy or girl in square A of each court is declared a "court winner." Pupil in square A of the first court is declared winner of the game.

SOFTBALL SKILLS

ACTIVITIES TO BE DEVELOPED DURING THE TELECAST

The Overhand Throw

The Underhand Throw (Pitching)

Fielding Fundamentals

Fundamentals of Batting

Demonstration of Game, "Team Pitch Softball"

ACTIVITIES FOLLOWING THE TELECAST

Most pupils at the fourth grade level have played little or no softball. For this reason it is imperative for softball skills to be taught and developed prior to playing the game. When practicing the skills, the children will advance rapidly if they practice the activities in small groups.

To develop correct form by the pupils, diagrams and descriptions of the skills are presented to serve as examples to the teacher.

All explanations are for the right-handed pupil.

The Overhand Throw

1. HOLD BALL IN THE HAND, PALM DOWN, WITH FINGERS SPREAD COMFORTABLY AROUND THE BALL.

2. DRAW ARM UPWARD WITH ELBOW BENT WHILE SHIFTING WEIGHT TO THE RIGHT FOOT.

3. SWING RIGHT ARM FORWARD TO THROW BALL AS STEP IS TAKEN WITH THE LEFT FOOT.

4. FOLLOW THROUGH WITH ENTIRE ARM AND BODY.

SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

The Underhand Throw (pitching)



1. HOLD BALL IN THROWING HAND, PALM UP, WEIGHT ON RIGHT FOOT.



2. SWING RIGHT ARM BACK, KEEPING IT CLOSE TO THE BODY.



3. SWING RIGHT ARM FORWARD TO THROW BALL AS STEP IS TAKEN WITH LEFT FOOT. (FOOT OPPOSITE HAND HOLDING BALL)



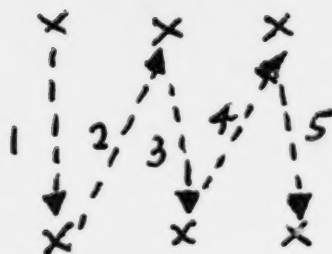
4. FOLLOW THROUGH WITH ENTIRE ARM AND BODY.

Activities for Improving Throwing Skill

Key: x = player

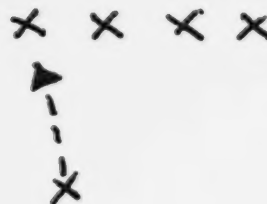
-----path of ball

Zig-Zag Drill



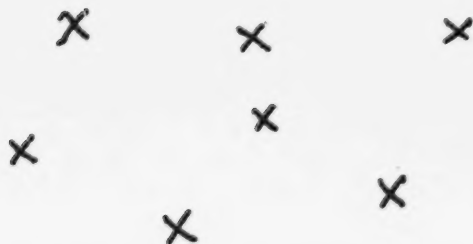
CHILDREN STAND IN TWO LINES AND THROW BALL FROM PLAYER TO PLAYER AS ILLUSTRATED.

Leader and Class



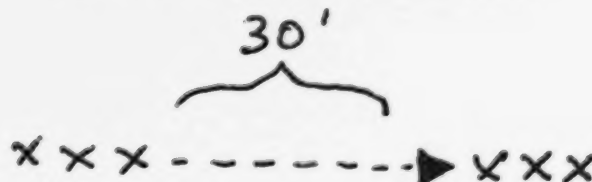
PLAYERS CATCH BALL THROWN TO THEM BY LEADER AND THEN THROW BACK TO LEADER. WHEN LEADER THROWS TO LAST PERSON IN LINE, THAT PERSON BECOMES THE NEW LEADER AND THE PREVIOUS LEADER GOES TO HEAD OF LINE.

Scattered Drill



PUPIL MAY PASS TO ANY OTHER PERSON IN THE GROUP. PERSON THROWING SHOULD CALL NAME OF PLAYER TO WHOM HE IS THROWING THE BALL.

Accuracy Pitching Drill



PLAYER USES UNDERHAND THROW TO ATTEMPT TO PITCH BALL BETWEEN TWO LINES THREE FEET APART MARKED ON THE PLAYGROUND. IF BALL TRAVELS BETWEEN TWO LINES, HE IS AWARDED ONE POINT. AFTER THROWING, PLAYER GOES TO END OF LINE, AND NEXT PUPIL STEPS UP TO CATCH AND PITCH THE BALL.

SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

Fielding Fundamentals--Catching

Keep eyes on ball. Cup relaxed hands, and give with the ball by bringing it toward the body as contact is made.

- Correct positions of hands when catching:

Above the Waist



RELAXED FINGERS UP WITH THUMBS CLOSE TOGETHER.

Below the Waist



RELAXED FINGERS POINTING DOWNWARD WITH LITTLE FINGERS CLOSE TOGETHER.

Catching a Rolling Ball



1. AS BALL APPROACHES PUPIL SHOULD SET HIMSELF IN FIELDING POSITION, FEET COMFORTABLY SPREAD, RIGHT FOOT SLIGHTLY BEHIND THE LEFT, BODY LOW WITH KNEES WELL BENT AND EYES "GLUED" ON THE BALL.

2. KEEP EYES ON BALL AS IT SETTLES INTO THE HANDS. GROUND BALLS ARE FIELDER BELOW THE WAIST, WHICH MEANS THE FINGERS WILL BE POINTING DOWNWARD, PALMS FACING THE BALL AND LITTLE FINGERS CLOSE TOGETHER.

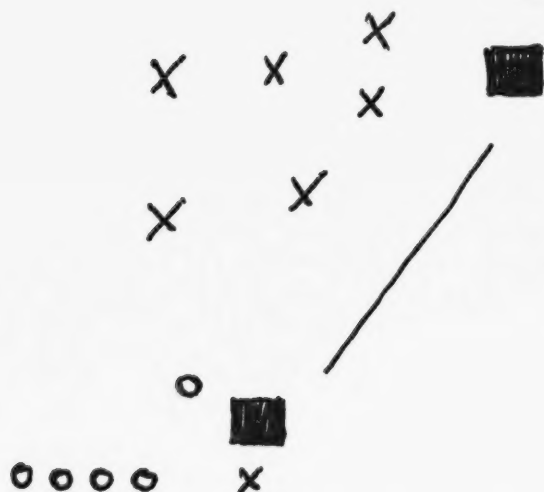
SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

Activities for the Improvement of Catching Skills

The same drills used for throwing will also improve catching skills. Have pupils throw fly balls and ground balls to improve those phases of fielding. In addition, the simple game described below will improve both throwing and catching skills.

Throw It and Run



1. THROWER SCORES RUN BY THROWING A SOFTBALL INTO PLAYING FIELD, RUNNING TO FIRST BASE AND BACK TO HOME BEFORE BALL IS RETURNED TO CATCHER.
2. IF A FIELDER CATCHES A BALL OR RETURNS BALL TO CATCHER BEFORE THROWER RETURNS HOME, THROWER IS OUT.
3. CHANGE SIDES WHEN ALL ON ONE TEAM HAVE HAD OPPORTUNITY TO THROW.
4. TEAM SCORING MOST RUNS WINS.

Teaching Good Batting Fundamentals

(Descriptions given are for right-handed batters.)

The Stance

- Batter faces plate, left shoulder toward the pitcher.
- Feet are approximately width of shoulders apart, toes pointing straight ahead and parallel to each other. Weight should be evenly distributed on both feet.



- Look over left shoulder at pitcher and keep eye on ball all the way.
- Stand about one foot away from the plate.
- Faults which usually have to be corrected:

Standing too near or too far from the plate.
Facing the pitcher instead of the plate.

SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

Holding the Bat

- Grasp bat with left hand, about four inches from the end with the right hand just above it. Keep the hands together.

- Faults to watch for:

Holding left hand above the right (cross-handed batting).

Holding hands too far apart.

Holding bat too near the end.
(This is especially important with smaller pupils because the bat is not well-balanced for them if it is held too close to the end.)



The Swing

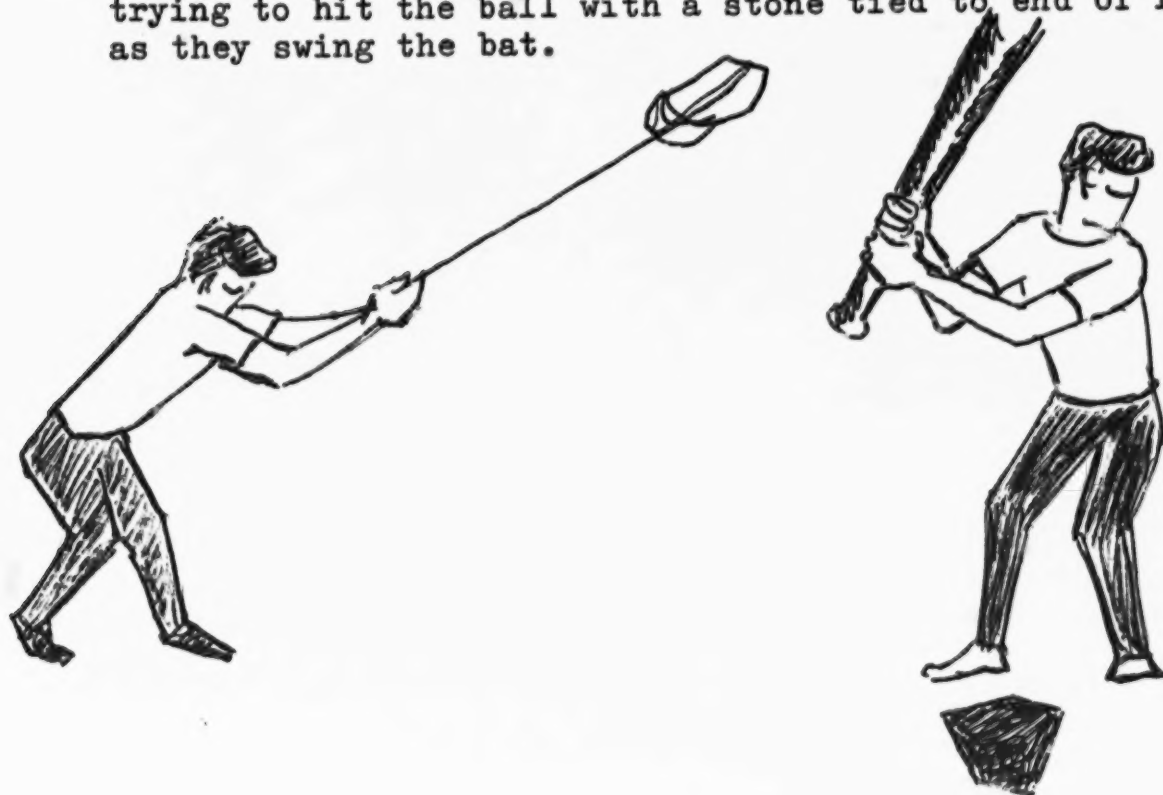
- Hold bat still and steady while waiting for the pitch. Don't rest bat on shoulders while waiting for one pitch.
- As swing is made pupil shifts weight to left foot by taking a short stride with the left foot toward the pitcher. Right foot is not moved during stride.
- Swing should be parallel to the ground.
- Keep hands and arms away from body and swing with a full arm swing straight around.



SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

- After contact with ball, bat must be dropped or placed on ground--never thrown.
- To swing correctly, have boys and girls imagine they are trying to hit the ball with a stone tied to end of rope as they swing the bat.



The Correct Position For a Batter

Batting Drills

Safety

- Spacing of players with bats should be done with safety in mind for each drill.
- Always caution players never to throw the bat.

Drills

- Drill for placing the bat after a hit

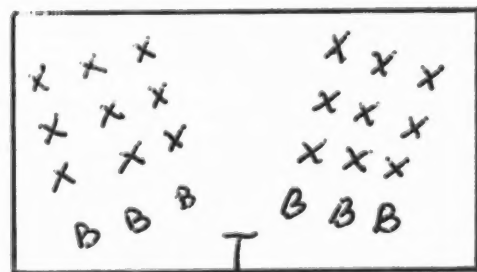
This drill is important for all classes to impress upon them that the bat should be placed or dropped on the ground--never thrown.

The mass batting drill formation as illustrated:

T = teacher

B = batter

X = waiting pupils



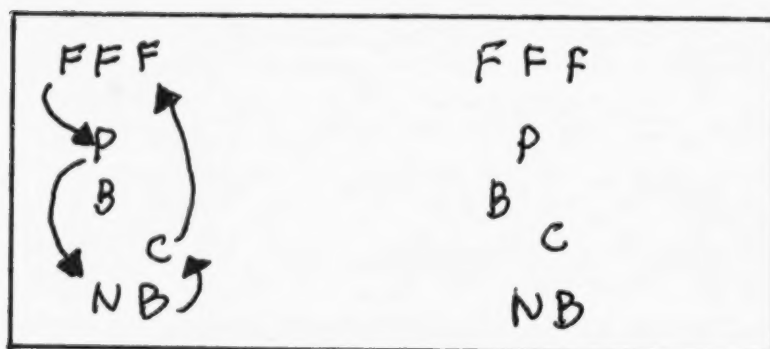
SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

Pupils swing at imaginary ball on teacher's command "swing," They drop or place bat in proper manner, and run to end of their line. First pupil waiting in line then comes to "bat" to practice the swing and proper release of the bat.

- Parallel batting practice

Each batting group may consist of from five to eight players. This will allow for one batter, one catcher, one foul ball chaser who is the next batter, one pitcher, and from two to four fielders. (See illustration below.)



B = batter
P = pitcher
C = catcher
F = fielder
NB = next batter

Each group should be given two or three softballs, for which they are responsible.

Each batter bats a specified number of pitches, and then positions are rotated. Arrows on illustration show manner of rotation.

The teacher walks back and forth behind the batting groups to offer advice and suggestions.

- Put the Runner Out

This is a good lead-up game to softball, which involves good batting techniques. Description of the game is on page 74 of the guide, Physical Education for the Intermediate Grades.

* * *

SOFTBALL SKILLS (continued)

ACTIVITIES FOLLOWING THE TELECAST

Team-Pitch Softball

This game is more suited to Physical Education classes than regular softball. It has these advantages over softball:

- Pupils get opportunity to bat several times.
- Boys and girls can and should play the game together.
- Pitcher attempts to pitch ball that is easy to hit.
- Game progresses faster than regular softball.

Team-Pitch Softball

Playing Area: Softball Diamond

Level: Intermediate Grades

Equipment: Softball and bat

How We Play It:

Game is played the same as softball with these outstanding innovations:

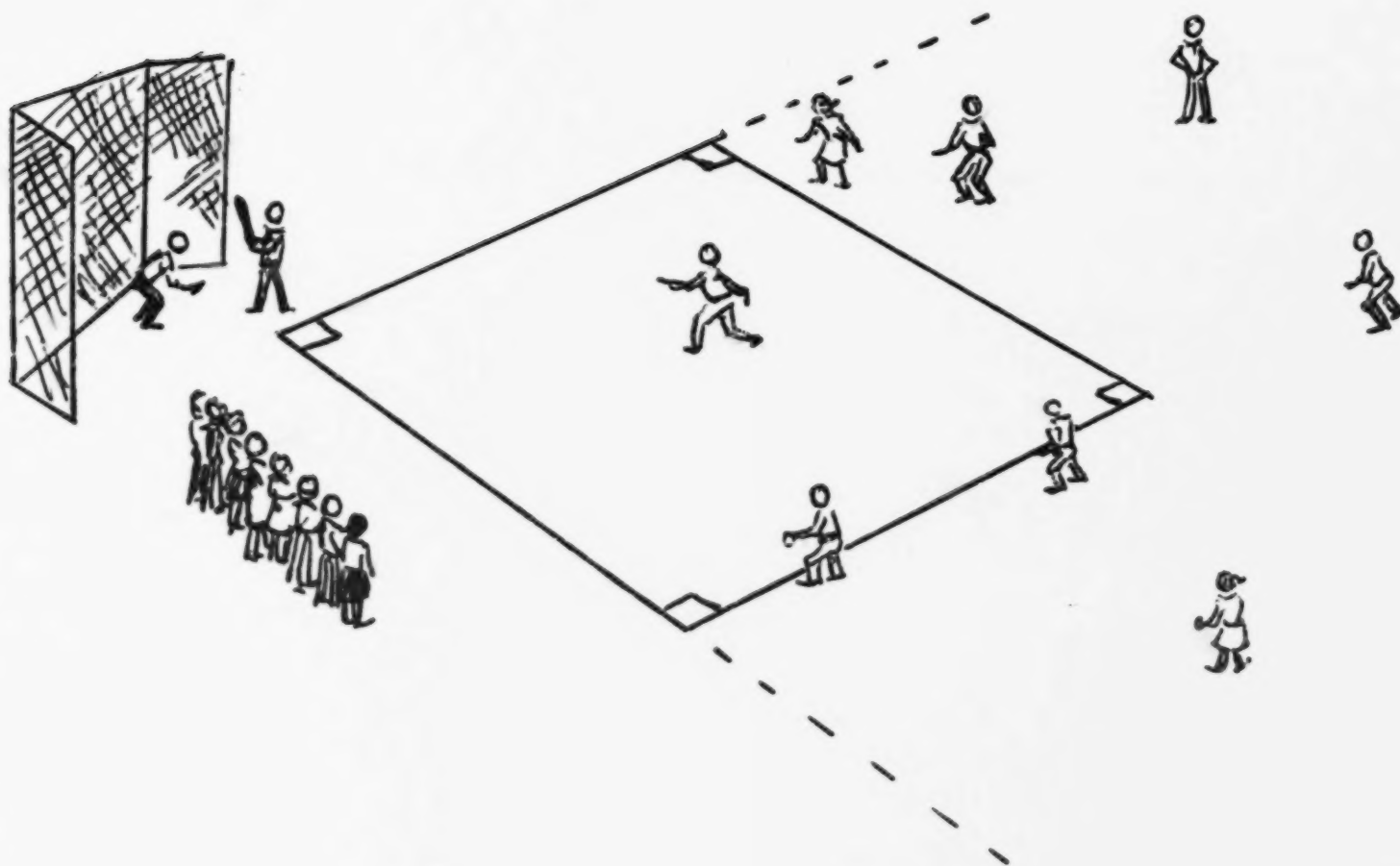
- The team at bat chooses a member from their own team to be the pitcher. This player pitches to his teammates while all members of the opposing team take their defensive positions on the diamond.
- Only one pitch is thrown to each batter at which time the pitcher concentrates his efforts towards allowing his (or her) teammates to hit the ball.
- If the batter hits ball into fair territory, and the ball is not caught, the batter runs out the hit as in regulation softball.
- If batter misses, hits a foul or lets the ball pass without swinging, he is out.
- All players bat each inning, with the exception of the team's pitcher. After the last player has batted, the side is retired, and the runs scored for the inning are added up. Then the opponents take their turns at bat, and members of the other team take their positions in the field.
- "Stealing" a base is not allowed. Base runners may advance only when batter hits a fair ball that is not caught.
- If batter "throws" bat after hitting the ball, he is out.

SOFTBALL SKILLS

ACTIVITIES FOLLOWING THE TELECAST

- Practice safety at all times. Because most batters are right handed, players waiting to bat should line up at a safe distance on the first base side. (See illustration below.)

Safety in Softball



SCIENCE FOR YOU

TO THE TEACHER

One of the fundamental purposes for these telecasts is to bring to teachers and pupils those science experiences which might not ordinarily be possible in each classroom. For some classes these telecasts will be enrichment for broadening the scope of study; for others they may be an introduction or motivation for the particular area of study. These telecasts in no way dictate a time schedule for teachers. The interests, needs and abilities of the children in the class are determining factors. We hope that the telecasts will stimulate pupil-teacher planning and follow-up activities such as discussions, reports, research reading and experimental projects.

SIMPLE MACHINES

Check to see if these materials are available in your building.

If not, they may be ordered from School Supply Catalogue.

<u>Unit</u>	<u>Unit No.</u>	<u>Item</u>
Each	#2803	Balance Spring, 2,000 gr. and 64 oz.
Each	#2898-01	Pulleys, Single block, Bakelite
Each	#2898-02	Pulleys, Double block, Bakelite

LESSON 13

SIMPLE MACHINES

THE TELECAST

A demonstration of the wheel and axle and pulley

WORDS PERTAINING TO THE UNIT

friction
work

wheel
axle

pulley

LESSON 14

SIMPLE MACHINES

THE TELECAST

A demonstration of the inclined plane, screw and wedge

WORDS PERTAINING TO THE UNIT

inclined plane

screw

wedge

LESSON 15

SIMPLE MACHINES

THE TELECAST

A demonstration of the lever
The safe use of everyday tools

WORDS PERTAINING TO THE UNIT

lever*

fulcrum

*Note: Accepted pronunciation according to Webster's New Collegiate
Dictionary: lē'vēr

SIMPLE MACHINES (continued)

ACTIVITIES RELATED TO SIMPLE MACHINES UNIT

Make a picture chart of things used by children and the machines that made them. (Example: coat and a sewing machine)

Exhibit toys or models that contain simple machines.

List safety rules for use of machines.

List things people can do with machines that they cannot do without them.

Collect and draw pictures that contrast use of modern machinery with older method of doing the same job.

Construct a bulletin board showing toys that require various kinds of force for operation.

List simple machines found in school building.

Construct models of simple machines.

Do research on how machines have changed our way of getting food, clothing, and shelter.



SIMPLE MACHINES (continued)

ACTIVITIES RELATED TO SIMPLE MACHINES UNIT

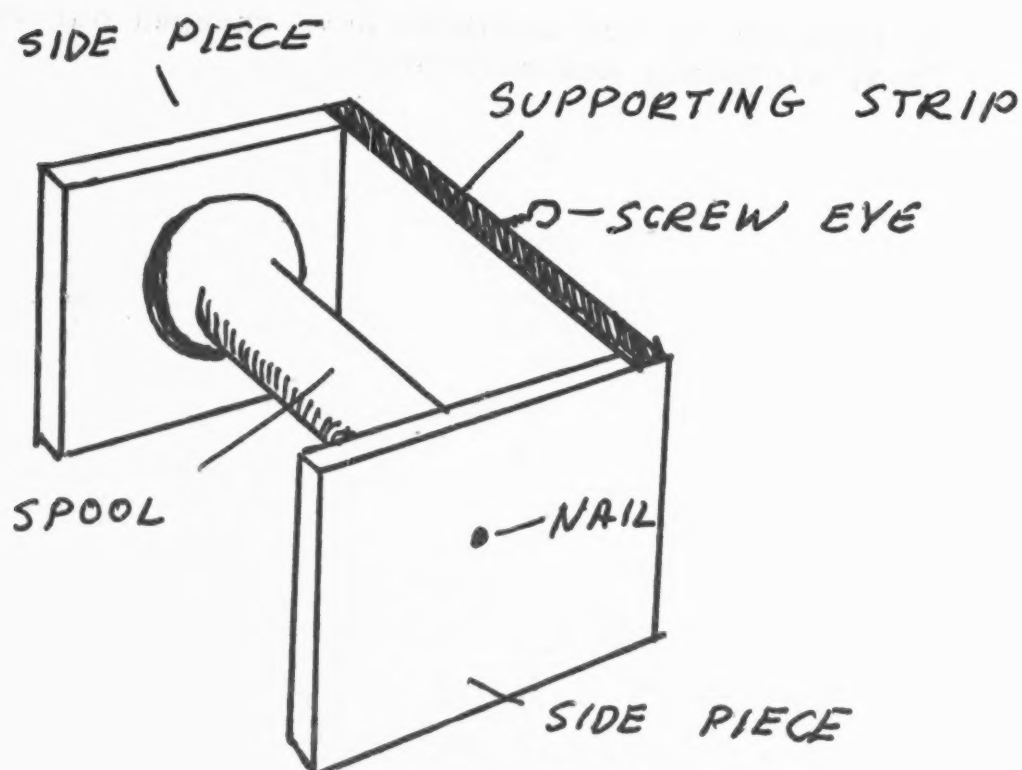
How to Make a Usable Pulley

Materials: A strong spool, a large nail, three small pieces of wood, a screw-eye.

Procedure: Nail the three small pieces of wood together in the following fashion. The side pieces may be pieces of wood about 2 inches square while the supporting strip might be 2 inches wide and cut a little longer than the spool.

Next, insert the spool horizontally between the side pieces and drive a nail through the center of both side pieces, threading the spool with the nail. Merely attach the screw eye on the supporting strip so that the pulley can be mounted.

Another method of making a simple pulley might be easily done by nailing an empty typewriter ribbon reel between two small pieces of wood and reinforced with a back support.



SIMPLE MACHINES (continued)

ACTIVITIES RELATED TO SIMPLE MACHINES UNIT

Demonstrating that a Screw is an Inclined Plane

Materials: Five-inch square of paper, black crayon, pencil

Procedure: Cut the square into two triangles. Stand one on its side and notice its relationship to the inclined plane. Using the black crayon, mark a heavy black line along the edge of the inclined plane. Next, wrap the paper triangle around the pencil, so as to form an inclined plane. Compare to a real screw and note that the inclined plane winds around as it climbs.



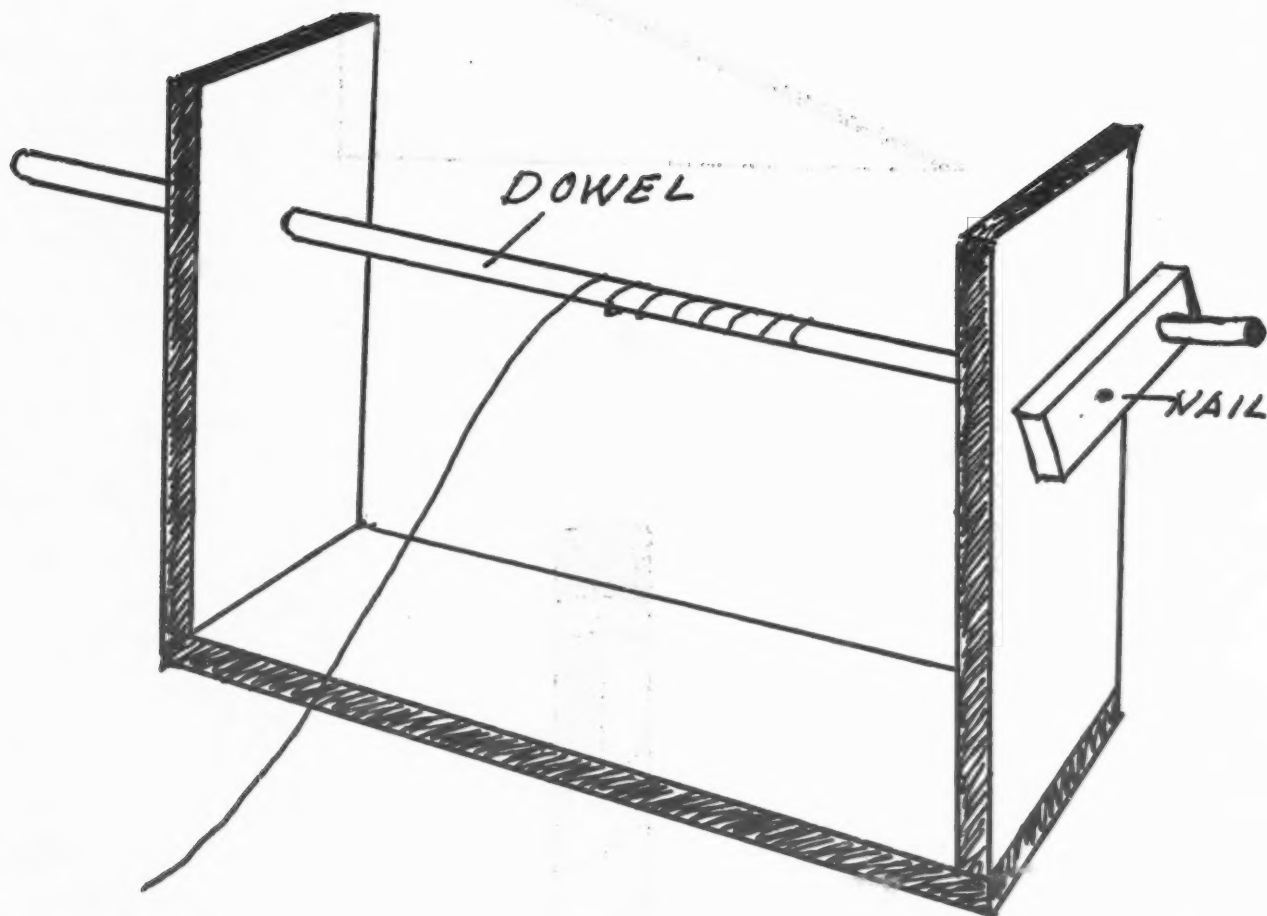
SIMPLE MACHINES (continued)

ACTIVITIES RELATED TO SIMPLE MACHINES UNIT

How to Make a Windlass (a simple machine for hoisting weight by means of winding rope)

Materials: Several small strips of wood, a dowel

Procedure: Construct as diagrammed.



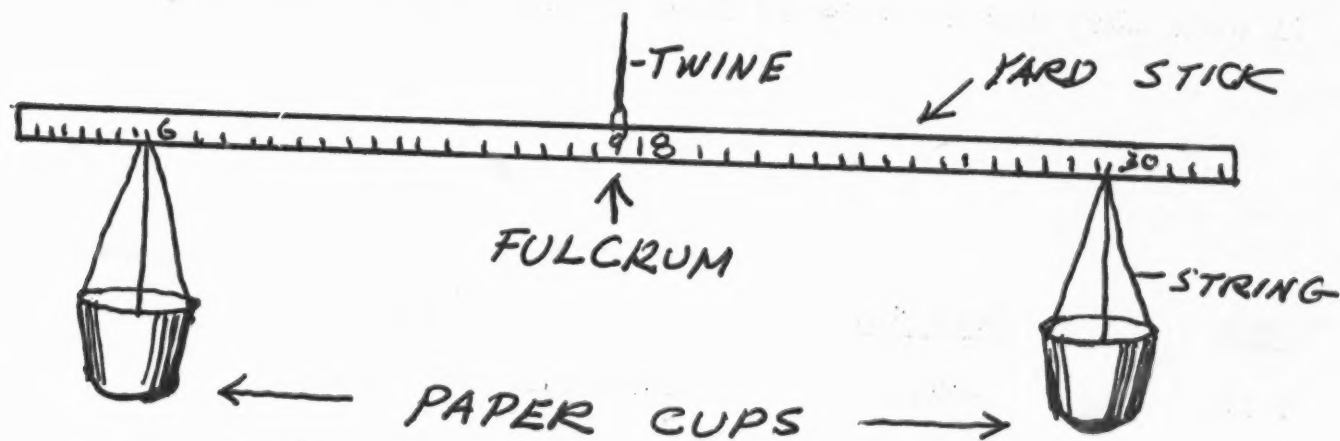
SIMPLE MACHINES (continued)

ACTIVITIES RELATED TO SIMPLE MACHINES UNIT

Demonstrating How a Lever is Used in Determining Weight

Materials: A yard stick, two paper or tin foil cups, string and twig, a drill, two bolts with nuts.

Procedure: Construct as diagrammed.



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- Everyday Machines and How They Work, Schneider, Herman, McGraw Hill 1950.
- Now Try This, Schneider, Herman, Hale, 1959.
- Simple Machines and How They Work, Sharp, Elizabeth, Random House, 1959.
- What Is a Simple Machine?, Darby, G., Benefic Press, 1961.
- Machines, The How and Why Wonder Book, Notkin, Jerome and Gulkin, Sidney, Wonder Books, 1960.

ROCKS AND MINERALS

Check to see if these materials are available in your building.
If not, they may be ordered from School Supply Catalogue.

<u>Unit</u>	<u>Unit No.</u>	<u>Item</u>
1 lb.	#2811	Ammonium Dichromate
1 lb.	#2839	Copper Sulfate, Cryst. Tech.
10 lb. bag	#3961	Plaster Paris

LESSON 16

ROCKS AND MINERALS

THE TELECAST

The discovery of ways in which rocks were formed.

WORDS PERTAINING TO THE UNIT

igneous
stratified

metamorphic
lava

sedimentary
molten

LESSON 17

ROCKS AND MINERALS

THE TELECAST

The story of fossils -- clues to prehistoric times -- will be presented.

WORDS PERTAINING TO THE UNIT

dinosaur
prehistoric
limestone

fossil
marine

trilobite
petrified

ROCKS AND MINERALS

THE TELECAST

Ways of collecting, displaying, and identifying different types of rocks will be shown.

WORDS PERTAINING TO THE UNIT

identify
display

hardness scale
specimens

luster

ROCKS AND MINERALS

THE TELECAST

A visit with a geologist

WORDS PERTAINING TO THE UNIT

geology

geologist

ROCKS AND MINERALS

ACTIVITIES RELATED TO ROCKS AND MINERALS UNIT

Gather a collection of rocks in the community; identify; label.

Construct clay models of limestone cave, volcanic island.

Take a trip to find out about the kinds of rocks used in buildings.

Make reports on famous volcanoes: Vesuvius, Etna, Krakatoa, Paricutin, Fujiyama.

List types of metamorphic, igneous, sedimentary rocks.

Hunt for fossils.

Collect pictures of geysers and mountains.

Visit an excavation to observe strata.

List areas in the home where rocks are used.

Collect metals or metallic objects.

Try burning an asbestos sample.

Visit museum to observe rock and mineral collections.

Make reports on common minerals such as bauxite, copper, iron ore, uranium.

Make reports on:

How iron is made into steel.

How diamonds were formed and where they are mined.

How petrified wood was formed.

Methods used in locating oil.

How limestone is formed.

ROCKS AND MINERALS (continued)

ACTIVITIES RELATED TO ROCKS AND MINERALS UNIT

Simple Way to Make the Hardness Test

Hardness 1



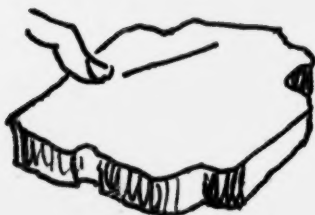
Any mineral you can scratch with your fingernail has Hardness 1.

Hardness 3



Your fingernail won't scratch these, but your penny will if you press down hard.

Hardness 2



Can be scratched with the nail but not as easily as those of Hardness 1.

Hardness 4



Your knife will easily scratch minerals of this hardness, but your penny won't.

Hardness 5



Your knife will just barely scratch minerals that have Hardness 5.

Hardness 6



Minerals with this hardness will scratch the blade of your knife, but the blade won't scratch them.

Hardness 7



Glass will be scratched easily by minerals of this hardness. They'll scratch almost any other common mineral, too.

ROCKS AND MINERALS (continued)

ACTIVITIES RELATED TO ROCKS AND MINERALS UNIT

Making crystals

Purpose: To note special forms of crystals.

Materials:

Salt, a few spoonfuls
Sugar, a few spoonfuls
Alum
Copper Sulfate crystals
Nickel Sulfate crystals
Drinking glasses (5)
Hot water
Cotton string
Paddle pop sticks
Magnifying glass

Procedure:

Dissolve as much sugar as you can in a drinking glass of hot water. Stir as you add. (You will arrive at this point when no more sugar dissolves.) Tie a cotton string to stick and immerse in saturated sugar solution. Set aside, and allow evaporation to progress. Observe daily for evidence of crystals forming on cotton string. Allow at least a week for crystal formation.

REFERENCES

- My Hobby Is Collecting Rocks and Minerals, Jensen, David,
Children's Press, 1959.
- Rocks and Minerals and The Stories They Tell, Irving, Robert,
Knopf, 1956.
- What Is a Rock?, Syrocki, B. John, Benefic Press, 1959.
- Rocks and Minerals -- A Guide to Minerals, Gems, and Rocks,
Zim, Herbert, Simon, 1958.
- Wonders of Rocks and Minerals, Pearl, Richard, Dodd, Mead, 1961.
- The Story of Rocks and Minerals -- A Guidebook for Young Collectors,
Seaman, David, Harvey House, 1956.

BIRDS

LESSON 20

THE TELECAST

Bird hike adventures

BIRDS

LESSON 21

THE TELECAST

A visit with a domesticated bird family (the pigeon).

WORDS PERTAINING TO THE UNIT

home roost
homing instinct

pigeon coop
banding

ACTIVITIES RELATED TO BIRD UNIT

Make a comparison of a bird's wing structure for special flight purposes.

Classify birds according to: water birds, land birds, birds of prey, flightless birds, etc.

Collect feathers.

Also refer to activities found in the Semester I Bird Unit.

REFERENCES

Birds and Their World, Fenton, Carroll, Day, 1954.

A Child's Book of Birds, Hussong, Clara, Golden Press, 1959.

LESSON 22

PLANTS

THE TELECAST

An examination of the seed-making devices of plants

WORDS PERTAINING TO THE UNIT

ovule	petal	nectar
pistil	pollen	pollen tube
attract	pollen grain	

LESSON 23

PLANTS

THE TELECAST

A demonstration of different ways of starting plants

WORDS PERTAINING TO THE UNIT

bulb	root	slip
seed	stem	cutting

LESSON 24

THE TELECAST

A presentation of children's projects

PLANTS (continued)

ACTIVITIES RELATED TO PLANT UNIT

Visit local greenhouse or florist shop.

Try raising unusual or exotic plants.
(orange, peach, avocado, cotton seed)

Make cuttings. Plants that can be used are: geraniums, ivy, begonias.

Use a sharp knife. Cut on a slant and remove all but a few of the top leaves of the cutting. Cuttings may be sprouted in moist sand or water.

Observe capillary action in celery or other plants by placing in colored ink.

Osmosis Experiment

Hollow out a medium-sized carrot. Use a brace and bit or an apple corer for the job. Select a bottle cork that will fit into the opening in the carrot. Get a nail about as big around as a soda straw. Hold the nail with a pair of pliers, heat it over a flame, burn a hole lengthways through the cork. Put soda straw through the hole.

Put teaspoonful of sugar in quart glass of water and put sugar water inside the carrot. Color the water with a few drops of ink so that it can be seen more easily. Place cork snugly in carrot. Place carrot in a glass of tap water.

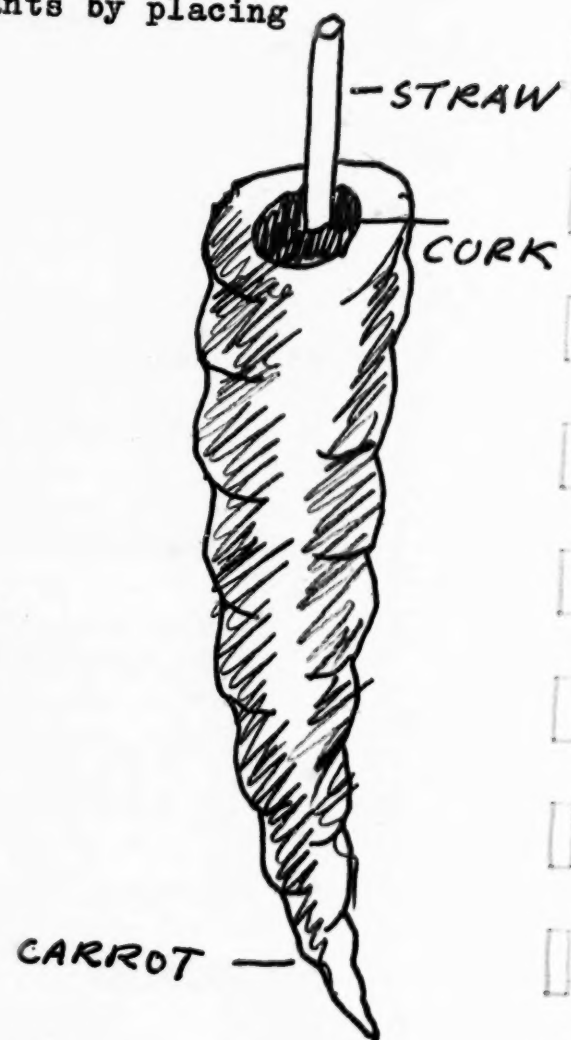
When you place the straw in the carrot, the sugar solution will move part way up the straw. Put a pencil mark on the straw to show this point.

Results:

After a few hours the water in the straw will be at a higher level, and if the action is allowed to continue, the water will overflow the end of the straw.

Look Inside the Seeds

Take some fairly big seeds and soak them overnight. Try beans, peas, and corn. Cut them in half and see the baby plants inside.



PLANTS (continued)

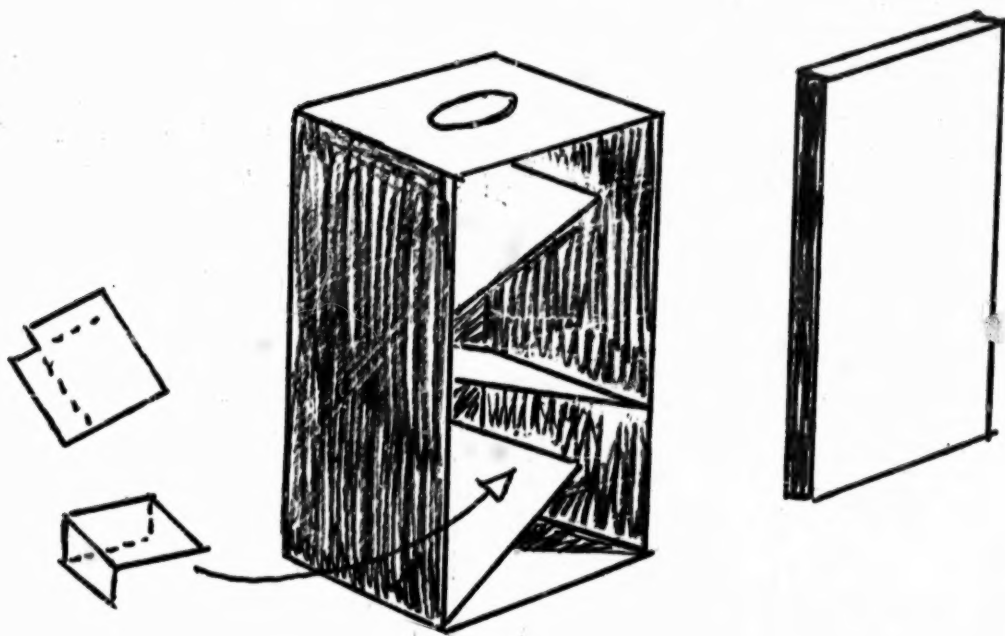
ACTIVITIES RELATED TO PLANT UNIT

Sprouting Seeds

Line a glass jar with paper toweling. Put an inch of water in the bottom. Slip the seeds in between paper and glass. Keep in a warm place.

After the water has been soaked up, turn the glass upside down. Seedling stems will twist to reach up. Roots will reach down.

Importance of Light to Plants



A shoe box or similarly shaped box will do. The divisions in the box are made of filing cards about $\frac{1}{2}$ " shorter than the width of the box. They are attached to alternate sides of the inside of the box with Scotch tape and bent to stay at a slight angle. Unattached ends are slanted toward the top of the box.

Stand the box up as shown in the drawing. Cut a large hole in the top. A growing plant such as ivy or some other climbing plant may be set in a small pot on the bottom. When the cover of the box is put in place, the only source of light comes from the top opening. The plant will grow back and forth, and finally reach the light.

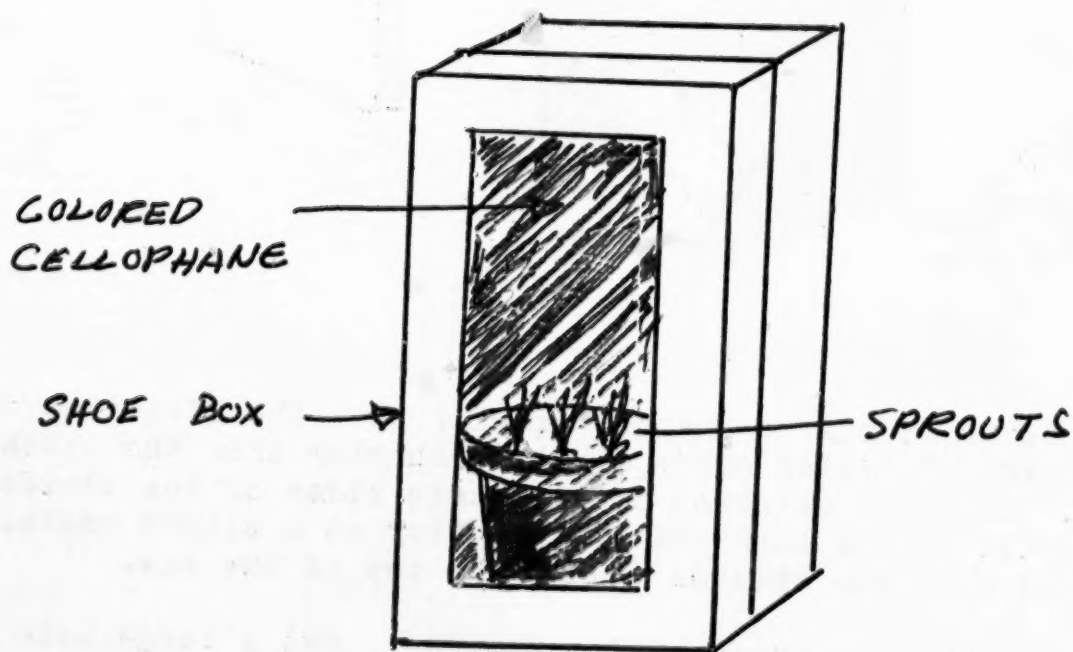
PLANTS (continued)

ACTIVITIES RELATED TO PLANT UNIT

Demonstrating the Effect Different Colored Light Has Upon Plants

Materials: Three shoe boxes, three small flower pots, Scotch tape, a knife or pen knife, box of canary seeds, cellophane sheets of red, yellow, and blue.

Procedure: Soak about 60 canary seeds for several hours, and then plant them, 20 seeds to a pot. Place in a warm, dark location, and allow them to sprout until they are about an inch high. In the meantime, cut a large window into the cover of each shoe box. Scotch tape each of the different colored cellophane sheets to the window openings. The shoe boxes will then each have a different colored window--red, yellow, and blue. Remove the sprouts from their dark habitat, and place a pot of seedlings to each shoe box. After putting the different colored lids on the boxes, place the shoe boxes in bright light but not sun light. Make sure the boxes are placed in an upright position when exposed to the light. It will be found that plants in the red box have bent very little, if any, while in the blue box bending will be most apparent.



PLANTS (continued)

ACTIVITIES RELATED TO PLANT UNIT

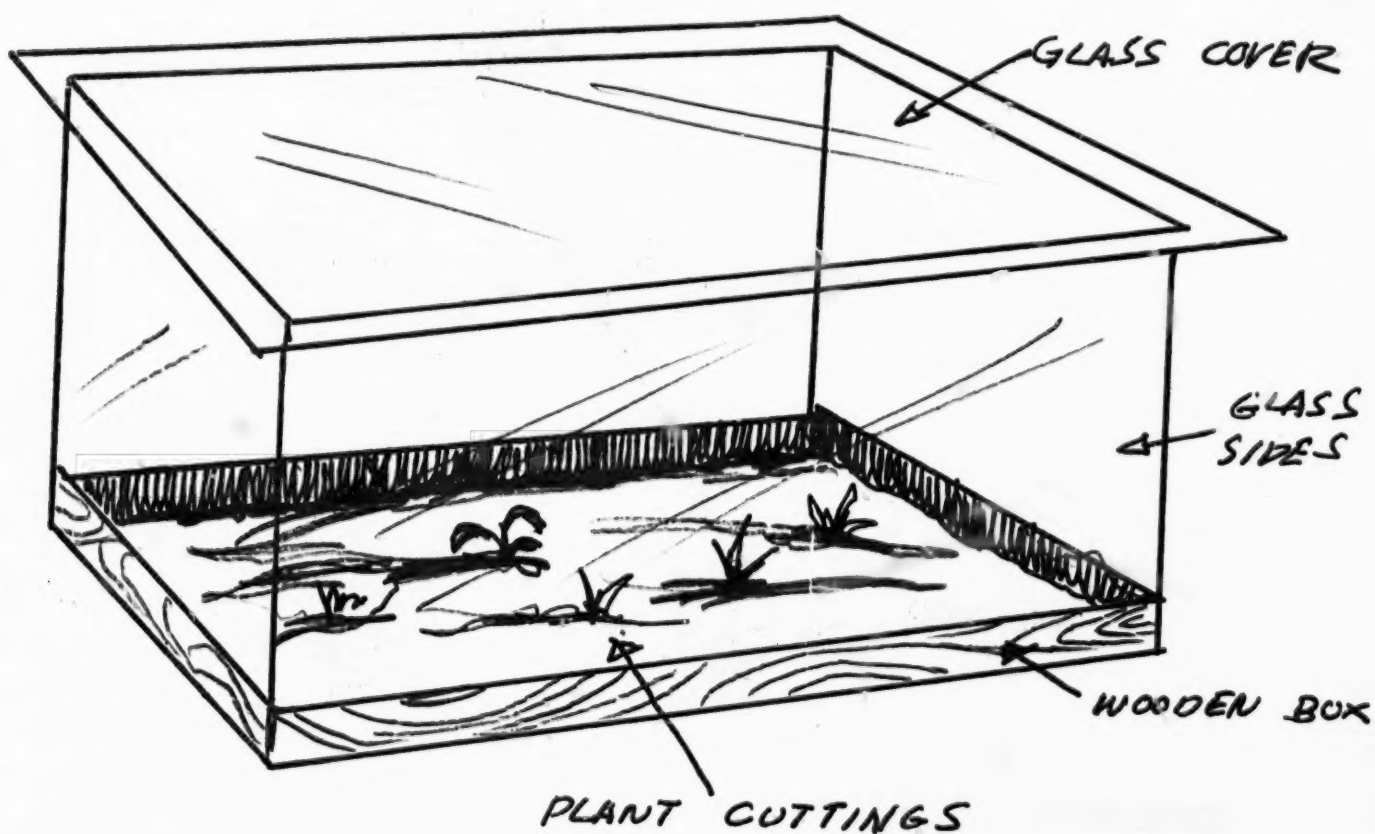
Starting New Plants from a Single Leaf

Materials: A large rex begonia leaf, a knife or razor, a container with damp sand and glass lid, a few pebbles or stones.

Procedure: Make a number of incisions into the main veins on the underside of the begonia plant. Place the leaf, underside down, upon the damp sand. Place a few pebbles or stones on the leaf to keep it flat. Put the glass lid on the container, and place it in good sunlight. In several weeks, tiny new plants will form where the veins have been cut when the plants are two or three inches high. Transplant into separate small pots with soil.

How to Make a Simple Greenhouse

Materials: A wooden box, about a foot square; five glass panes; damp sand; plant cuttings.



Procedure: Construct as diagrammed. Place wet sand in the box and the glass sides will be held in place by the pressure. Place cuttings of various plants into the damp sand and observe which plants will grow.

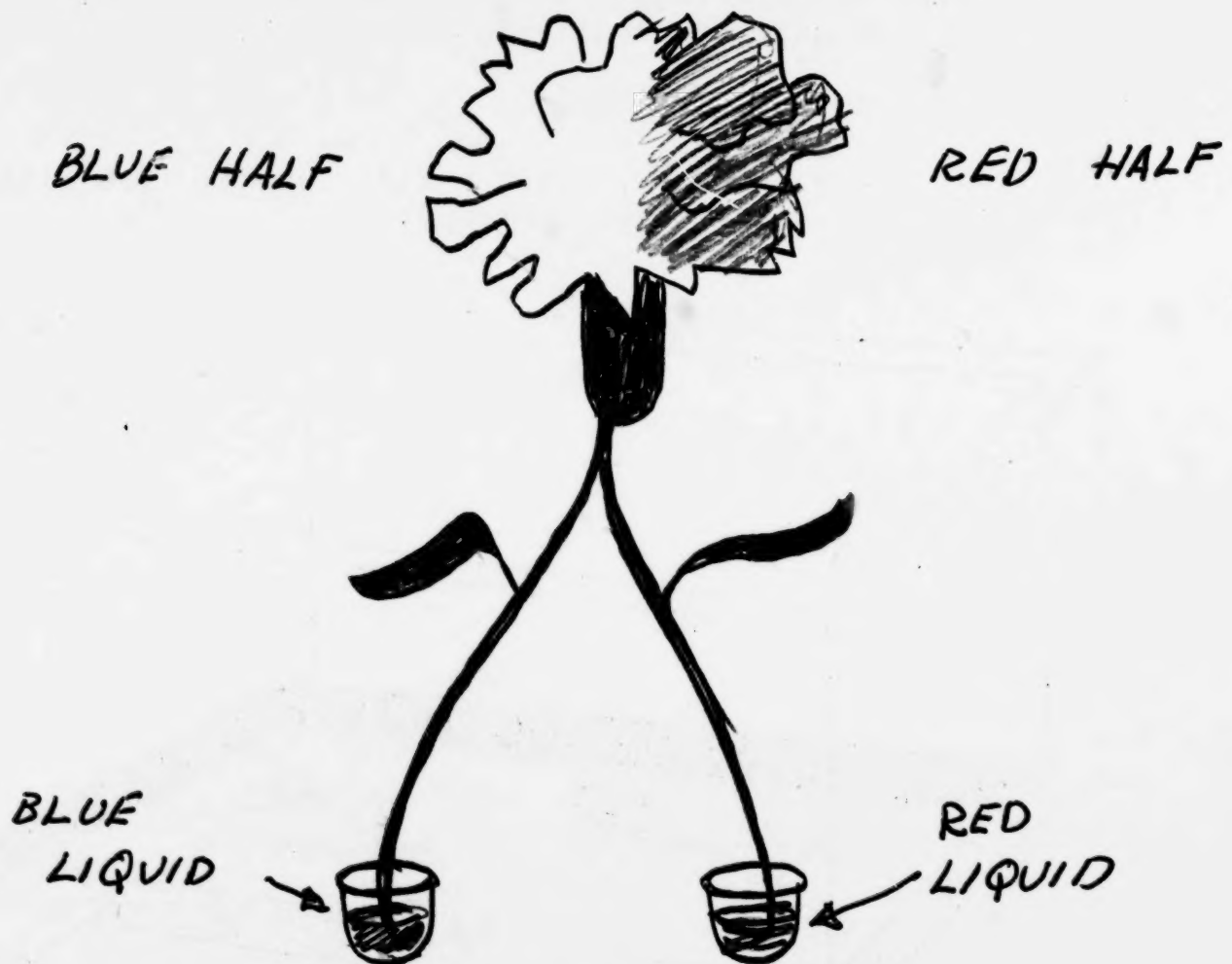
PLANTS (continued)

ACTIVITIES RELATED TO PLANT UNIT

Dramatizing Capillary Action in Plants

Materials: A long-stemmed white carnation, two tumblers filled with water and tinted with two different ink colors (red, blue).

Procedure: Split the stem of the carnation lengthwise without tearing up into the flower. Place each of the divided stem portions into the tumblers. Place in bright sunlight for several hours and observe that the flower will become tinted the two colors found in the tumblers.



REFERENCES

Botany, Hage, M. K., and Vere DeVault, Steck Co., 1960.